

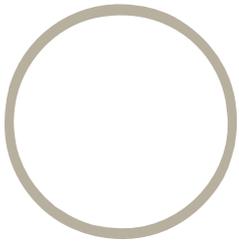


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Nutrition, health and related claims: update

A benefit cost analysis



Prepared for

Food Standards Australia and New Zealand



FINAL REPORT



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Canberra & Sydney*

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Background

The Centre for International Economics (TheCIE) previously (2008) conducted FSANZ's benefit cost study on health, nutrition and related claims (P293). This involved consulting widely with industry to assess the possible market impacts of changes to claims. FSANZ has now asked TheCIE to update the estimates based on the market growth that has occurred and changes in costs and prices. The previous analysis can be found in full at:

http://www.foodstandards.gov.au/_srcfiles/P293%20Health%20Claims%20FAR%20Attach%2011_1.pdf#search=%22health%20claims%20benefit%20cost%22

Previous work

As part of the 2008 report TheCIE conducted on health, nutrition and related claims seven possible market outcomes were identified:

1. new products developed to make use of previously banned claims;
2. existing products re-marketed to make use of a previously banned claim;
3. existing products not affected by the changes (no change);
4. existing products require small label changes to ensure compliance with the changed criteria;
5. existing products require changes to their existing marketing strategies due to changed criteria;
6. changes to the formulation of existing products, either small or large; and
7. existing products removed from the market as they are no longer viable under the proposed changes.

The seven potential market outcomes will create benefits and costs for food suppliers and consumers. Food suppliers may profit from new opportunities but incur costs due to lost opportunities or increased costs of compliance. Consumers might gain from the supply of new and better products, but lose if products are removed or their price is increased due to rising costs. Improved consumer satisfaction from new and better products is known as an improvement in consumer welfare.

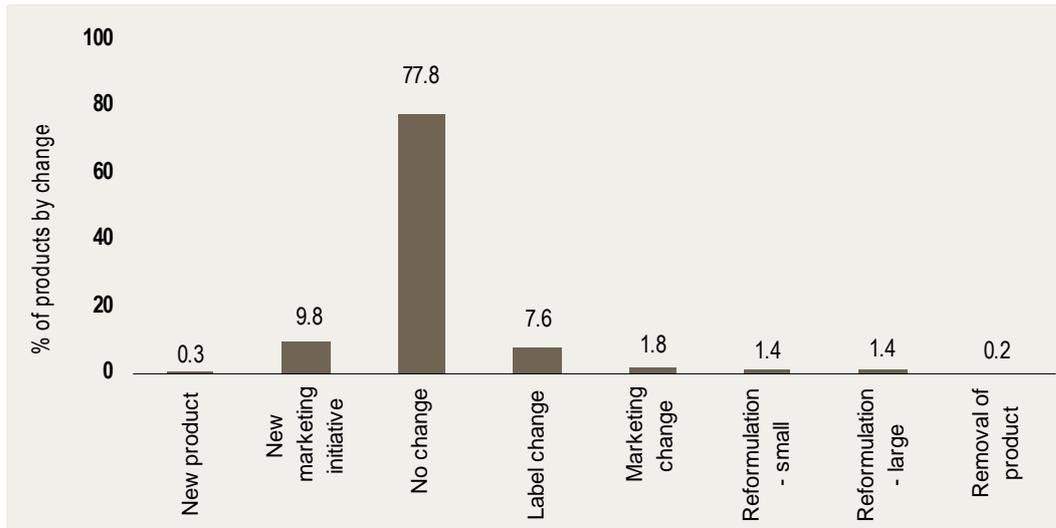
As a result of changes to health, nutrition and related claims, in some cases firms may need to change manufacturing processes, management procedures, the management and development of product packaging and labels, as well as placing additional requirements on the sourcing of primary ingredients. Such costs would apply to varying degrees across different parts of a firm and a firm's product range.

The CIE developed generalised business (cost/sales) models for each of the seven outcomes identified. These models represented the impact the changes would have at the stock keeping unit (SKU)/product level. Because costs and benefits tend to vary by size of SKU (value of annual sales), impact models for SKUs at three annual sales values: \$0m to \$5m, >\$5m to <\$50m and >\$50m were developed.

Incidence of change

Our previous work found that about 22 per cent of all products would be affected by changes to health, nutrition and the related claims (77.8 per cent unaffected) with market impacts distributed as shown in chart 1.

1 The majority of products were expected to have 'no change' as a result of previously considered reforms to health, nutrition and related claims



Data source: CIE calculations.

Generic benefits and cost of market outcome/impacts

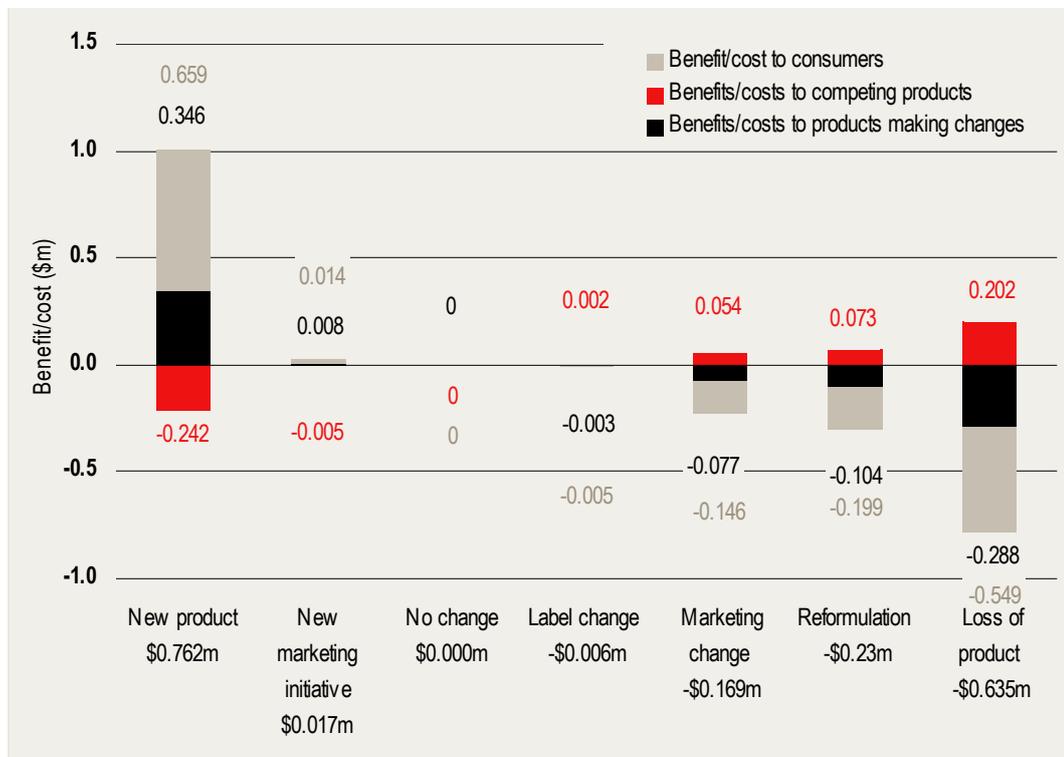
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The CIE previously estimated benefits and costs to food suppliers and consumers are presented in chart 2 for each of the seven potential market outcomes for a generic product with \$5 million in wholesale sales per year. These have been estimated using:

- a detailed activity/financial model of a representative food manufacturing firm to estimate direct benefits and costs to food suppliers:
 - the model is based on data collected from industry consultations;
 - the incidence of market impacts is estimated from a comprehensive survey conducted of industry which obtained about 55 per cent coverage of total Australian food sales;

- distribution of benefits and costs is highly skewed with new products providing large relative benefits, and withdrawal of products providing corresponding large costs;
- an economic model of changes in consumer preferences due to health and nutrition claims in an important Australian food market segment, to estimate consumer and indirect food supplier benefits and costs:
 - if new products or information are introduced, consumers stand to gain value over and above what they actually pay for the product, however when they substitute away from an alternative, old, product:
 - ... the same consumers will lose some value, so it is the net increase in value that needs to be estimated by the model;
 - ... food suppliers whose product is abandoned indirectly lose profits, so this is a cost that needs to be accounted for in addition to direct food supplier benefits (or costs) estimated using the activity/ financial model;
 - if an existing product is withdrawn from the market as a result of a change in the regulation of health and nutrition claims, the opposite impact to the introduction of a new product occurs and these can be determined from the model.

2 Consumer and food supplier impacts on a typical \$5 million product



Data source: CIE calculations.

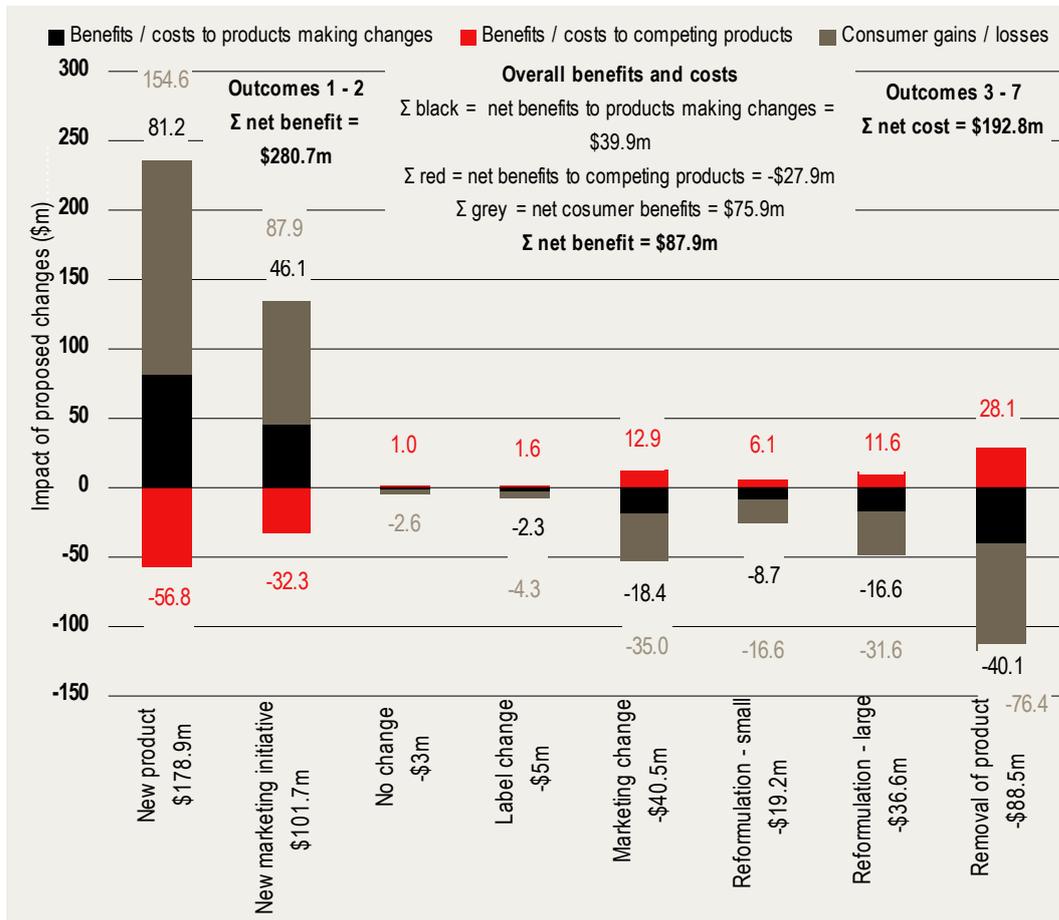
The seven potential market outcomes will create benefits and costs for food suppliers and consumers. Food suppliers may profit from new opportunities but incur costs

due to lost opportunities or increased costs of compliance. Consumers might gain from the supply of new and better products, but lose if products are removed or their price is increased due to rising costs. In economic parlance, improved consumer satisfaction from new and better products is known as an improvement in consumer welfare.

Overall economic impact for Australia and New Zealand

Multiplying the incidence of impacts to industry (chart 1) by the benefits and costs to industry and consumers per market outcome calculates the financial impact on Australian food suppliers and consumers from the FSANZ proposal (chart 3).

3 Total net present value benefits by market outcome (\$m)



Data source: CIE calculations.

The present value benefits from high level and general level health claims which promotes new products and new marketing initiatives (outcomes 1 and 2) are large, at \$280.7 million in aggregate. This is comprised of:

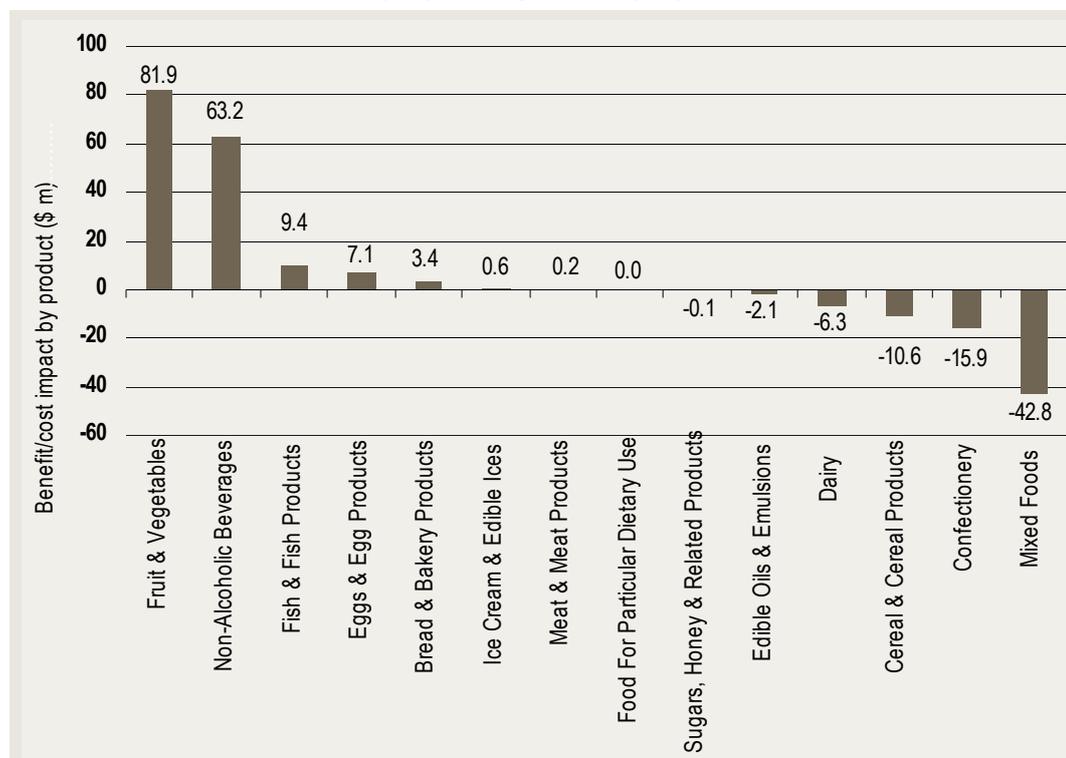
- direct benefits to consumers of \$242.5 million (154.6 + 87.9);

- direct benefits to food suppliers of \$127.3 million (81.2 + 46.1); and
- indirect losses to competing food suppliers of \$89.1 million (-56.8 + -32.3).

For outcomes 3 to 7, the proposed Standard will result in net present value costs of \$192.8 million. Food suppliers that need to change products or marketing initiatives face costs of \$87.5 million. This has flow-on impacts to consumers of \$166.5 million, while competing food suppliers gain by \$61.2 million. For the 80 per cent of products not affected by the proposed Standard it still carries a \$3 million cost due to firms having to inspect all products to ensure compliance with the changes.

Overall, the proposed Standard provides net present value benefits of \$87.9 million. However, these benefits are not evenly distributed by food type (chart 4). Based on consultations with industry, the largest benefits of the proposed changes were expected to be for fresh produce including fruit and vegetables. Implicitly, this is based on the perceived healthy aspects of these foods. Under the proposed changes, suppliers of these foods will now be able to further emphasise and market their produce using general level and high level claims. This result also reflects the large proportion of food expenditure dedicated to fruit and vegetables.

4 Total net benefits of the proposal by sector (\$m)



Data source: CIE calculations.

With New Zealand food consumption is equal to about 14.5 per cent of Australian food consumption, when the net benefits are scaled up to include New Zealand the net benefit increases from \$88 million a year to \$101 million. After allowing for

enforcement costs, the combined Australian and New Zealand net present value benefit of the proposed Standard is estimated at \$94.7 million. On this basis, it appears that the proposed Standard may provide a benefit-cost ratio of 1.4:1.

Updated analysis

Since conducting the previous analysis based on ABS 2006 Australian food consumption has increased by around 27 per cent in aggregate value terms due to inflation, population and income changes (chart 5). The total value of food consumption increased from around \$68 billion to \$86 billion a year in nominal terms. Adjusting for inflation of costs and prices, volume has increased by around 8.5 per cent.

Updated cost/profit models of market impacts

Costs, prices and profit margins have all changed since conducting the previous analysis. Taking these changes into account sees both estimated benefits and costs rise, but costs increase proportionally more than benefits due to declining profit margins.

To assess impacts on net benefits costs and profit margins have been indexed forward using appropriate ABS inflators namely: the Labour Price Index and Material Input Price Index. Labour rates have gone up by around 21 per cent while other material costs have gone up by around 16 percent. On average, costs have gone up 18 per cent. Food processors' profit margins have fallen from 8.2 to 7.3 per cent. As a result of these changes, the cost and profit models used previously for an SKU with \$5 million in annual sales have changed.

- For model 1, the annualised profit from a new product has declined from around \$346 000 to \$311 000 (chart 6) due to declining profit margins and higher costs. In addition, consumer annualised value from new products has fallen from \$659 000 to \$592 000 due to higher costs and prices but the opportunity cost to food suppliers who lose market share as a result of a new product has fallen from \$242 000 to 218 000 a year due to lower profit margins. Overall, the benefits of a new product have fallen from \$762 000 a year to \$660 000 a year. The change can also be seen by comparing charts 2 and 11.

5 Household expenditure on food (Australia), 2010 (\$86 billion): updates from previous chart 4.1

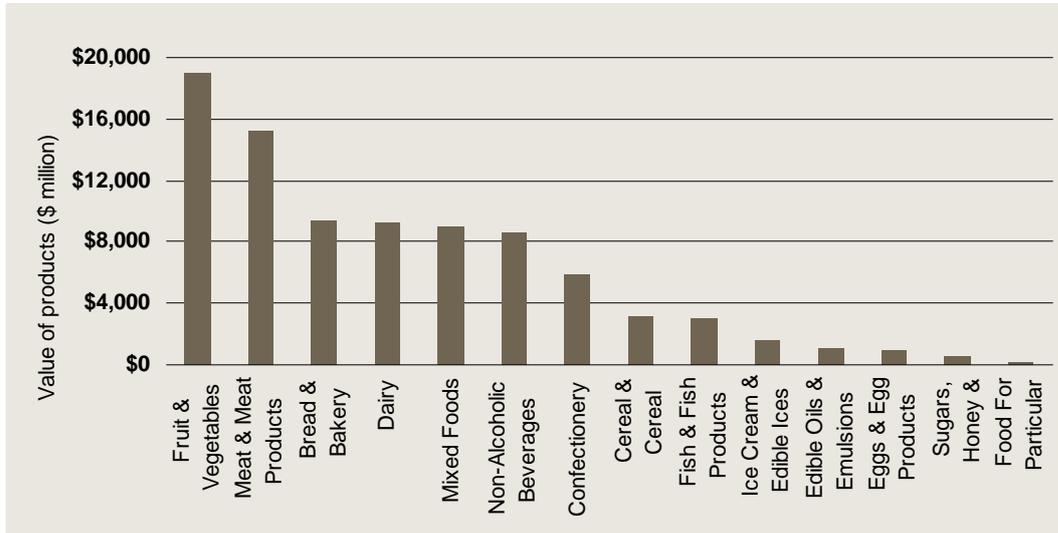
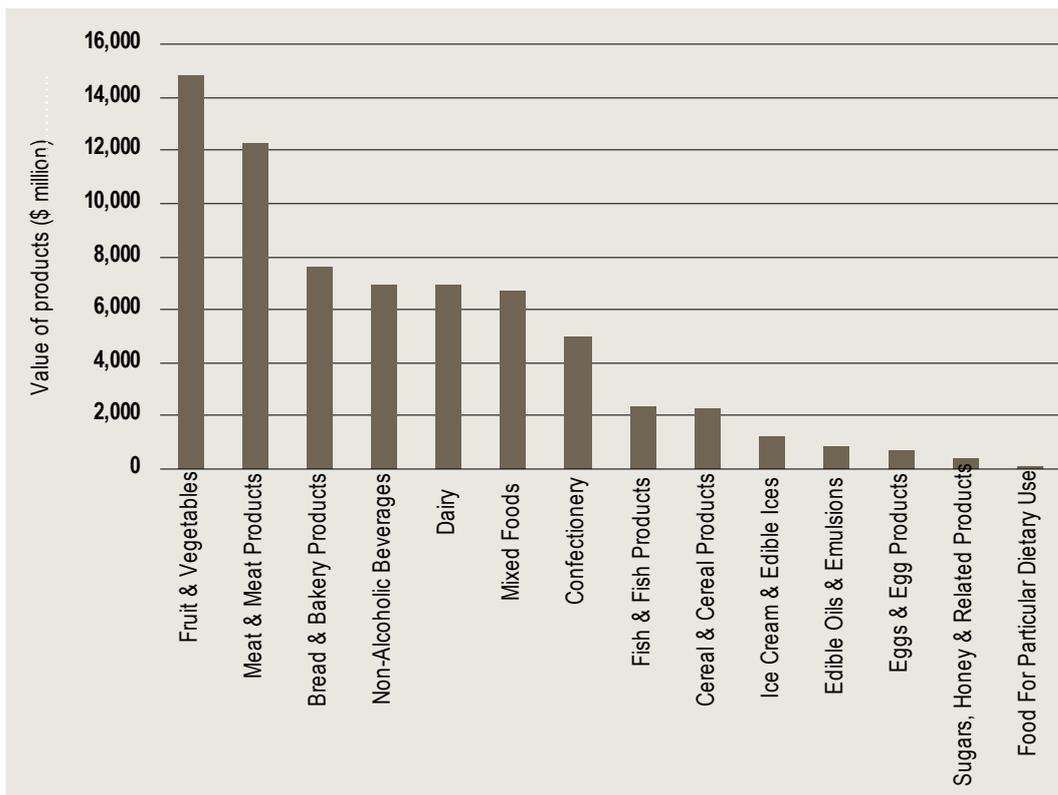


Chart 4.1 from 2008 report based on 2006 data (\$68 billion)



Data source: CIE calculations.

6 Cost and profit breakdown associated with a new product (model 1) — updates previous chart 2.5

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Costs			
<i>Product development</i>			
Concept and formulation	161 948		40 487
Marketing and development	405 984		101 496
Packaging development	11 716		2 929
<i>Ongoing marketing</i>			
Marketing roll-out		987 940	987 940
Label write-offs	0		0
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		2 468 510	2 468 510
Packaging costs		176 322	176 322
Labour and capital expenses		881 611	881 611
Production costs			4 659 295
Value of sales			5 000 000
Profit on sales			340 705
Profit on sales (taking account of discounting)			311 020

Chart 2.5 from 2008 report — cost and profit breakdown associated with a new product (model 1)

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Costs			
<i>Product development</i>			
Concept and formulation	142 920		35 730
Marketing and development	388 000		97 000
Packaging development	11 250		2 813
<i>Ongoing marketing</i>			
Marketing roll-out		968 500	968 500
Label write-offs	0		0
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		2 461 921	2 461 921
Packaging costs		175 851	175 851
Labour and capital expenses		879 257	879 257
Production costs			4 621 072
Value of sales			5 000 000
Profit on sales			378 928
Profit on sales (taking account of discounting)			345 912

Data source: CIE consultations.

- For model 2, the annualised profit from a new marketing initiative has declined from around \$7 534 to \$7 035 (chart 7).
- For model 3, the annualised cost of checking labels even for those not changed has risen from around \$188 to \$226.
- For model 4, the annualised cost of a label change has increased from \$2 773 to \$2 966 (table 8).
- For model 5, the annualised cost of remarketing a product has increased from \$76 564 to \$80 117 (table 9).
- For model 6, the annualised cost of reformulating a product has increased from \$104 266 to \$111 459 (table 10)
- For model 7, the annualised cost of removing a product has fallen from \$379 000 to \$259 183.

7 Additional costs/profits associated with a new marketing strategy (model 2) — updates previous 2.6

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	0		0
Marketing and development	405 984		101 496
Packaging development	11 718		2 929
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 878		969
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			105 395
Additional sales to justify costs			113 102
Additional profit on sales			7 707
Profit on sales (taking account of discounting)			7 035

Chart 2.6 from 2008 report — additional costs associated with a new marketing strategy (model 2)

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	0		0
Marketing and development	388 000		97 000
Packaging development	11 250		2 813
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 333		833
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			100 646
Additional sales to justify costs			108 899
Additional profit on sales			8 253
Profit on sales (taking account of discounting)			7 534

Data source: CIE consultations.

8 Additional costs associated with a small label change (model 4) — updates previous 2.7

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	0		0
Marketing and development	0		0
Packaging development	11 718		2 929
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 878		969
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			3 899
Additional sales to justify costs			0
Additional profit (loss) on sales			-3 899
Profit on sales (taking account of discounting)			-2 966

Chart 2.7 from 2008 report — additional costs associated with a small label change (model 4)

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	0		0
Marketing and development	0		0
Packaging development	11 250		2 813
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 333		833
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			3 646
Additional sales to justify costs			0
Additional profit (loss) on sales			-3 646
Profit on sales (taking account of discounting)			-2 773

Data source: CIE consultations.

9 **Additional costs associated with a revised marketing strategy (model 5) — updates previous 2.8**

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	0		0
Marketing and development	405 984		101 496
Packaging development	11 718		2 929
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 878		969
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			105 395
Additional sales to justify costs			0
Additional profit (loss) on sales			-105 395
Profit on sales (taking account of discounting)			-80 177

Chart 2.8 from 2008 report — additional costs associated with a revised marketing strategy (model 5)

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	0		0
Marketing and development	388 000		97 000
Packaging development	11 250		2 813
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 333		833
Manufacturing adjustment	0		0
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			100 646
Additional sales to justify costs			0
Additional profit (loss) on sales			-100 646
Profit on sales (taking account of discounting)			-76 564

Data source: CIE consultations.

10 Additional costs associated with a large reformulation (model 6) — updates previous 2.9

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	161 950		40 487
Marketing and development	405 984		101 496
Packaging development	11 718		2 929
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 878		969
Manufacturing adjustment	2 539		635
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			146 517
Additional sales to justify costs			0
Additional profit (loss) on sales			-146 517
Profit on sales (taking account of discounting)			-111 459

Chart 2.9 from 2008 report — additional costs associated with a large reformulation (model 6)

<i>Production cycle elements</i>	<i>Initial expense</i>	<i>On-going expense</i>	<i>Annualised expense</i>
	\$	\$	\$
Additional costs			
<i>Product development</i>			
Concept and formulation	142 920		35 730
Marketing and development	388 000		97 000
Packaging development	11 250		2 813
<i>Ongoing marketing</i>			
Marketing roll-out		0	0
Label write-offs	3 333		3 333
Manufacturing adjustment	2 849		712
<i>Manufacturing costs</i>			
Food and consumable inputs		0	0
Packaging costs		0	0
Labour and capital expenses		0	0
Additional production costs			137 088
Additional sales to justify costs			0
Additional profit (loss) on sales			-137 088
Profit on sales (taking account of discounting)			-104 286

Data source: CIE consultations.

Updated results

Although aggregate consumption has increased considerably in nominal terms profit margins and consumer benefits have been squeezed by rising costs of food production. As seen by comparing charts 2 and 11, for a typical \$5 million product the benefits to producers and consumers are both lower after re-estimation. Losses to competing producers are also lower because their opportunity costs have declined. That said, the benefits to competing producers are higher for marketing changes and reformulations because these have risen in costs and therefore represent a greater gain to those producers who do not have to make them.

Multiplying through the benefits and cost such as those presented in chart 11 by the previous surveyed incidence of market impacts on aggregate consumption values (chart 1) provides the net present value¹ estimates of the overall benefits for Australia (chart 12). The comparable 2008 results are presented in chart 3.

Comparing chart 12 with chart 3, it can be seen that the overall benefits from new products and new marketing initiatives (outcomes 1 and 2) rises from \$280.7 million (chart 3) to \$326.1 million (chart 12), a 16 per cent increase. The increase is driven by the 27 per cent increased nominal value of sales but mitigated by the 10 per cent decline in profit margins of food manufacturers.

The costs of market outcomes 3 to 7 (label changes, marketing changes, reformulations and removals) increase from \$192.8 million (chart 3) to \$246.3 million (chart 12), a 28 percent increase. The cost increase is driven by the 26 per cent nominal increase in sales value but is also affected by the decline in profit margin which affects the opportunity costs involved in the market impacts.

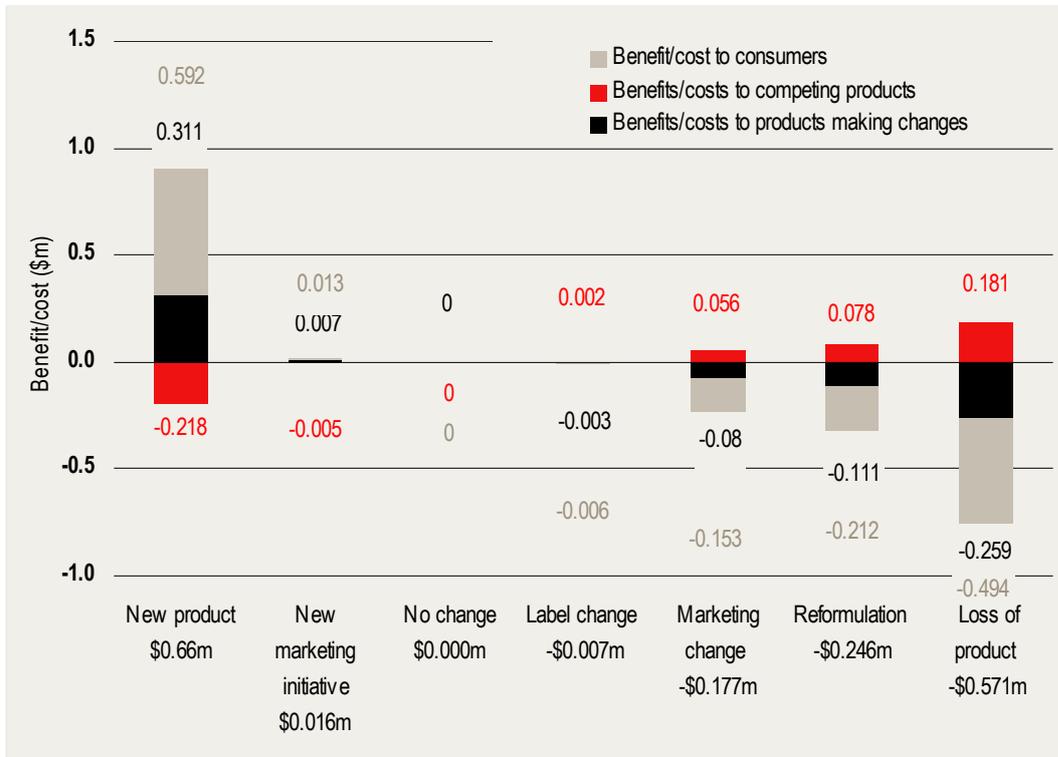
With costs increasing at a greater rate than benefits, the overall change in net benefits is negative with the net benefit falling from \$87.9 million (chart 3) to \$79.8 million (chart 12). Aggregating these benefits to include New Zealand and deducting enforcement costs derives the overall estimate of net present value benefits of \$83.8 million dollars. The result is a slight reduction in net benefits from \$94.7 million previously estimated in 2008.

Previously a benefit to cost ratio of 1.4:1 was estimated in the 2008 study. In the updated analysis the benefit to cost ratio is estimated to be 1.3:1.

The distribution of benefits and costs is not even across the various food categories and this is set out in chart 13.

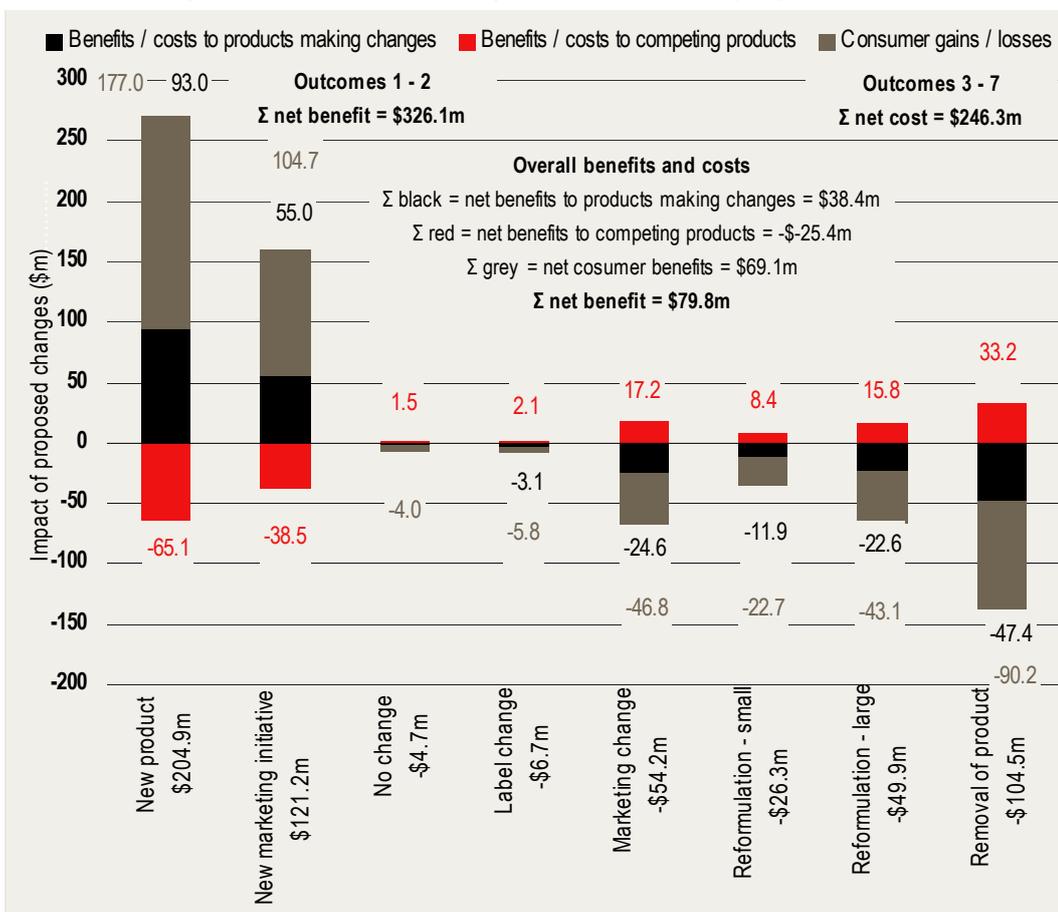
¹ A discount rate of 20 per cent is used given short product lifecycles.

11 Consumer and food supplier impacts on a typical \$5 million product



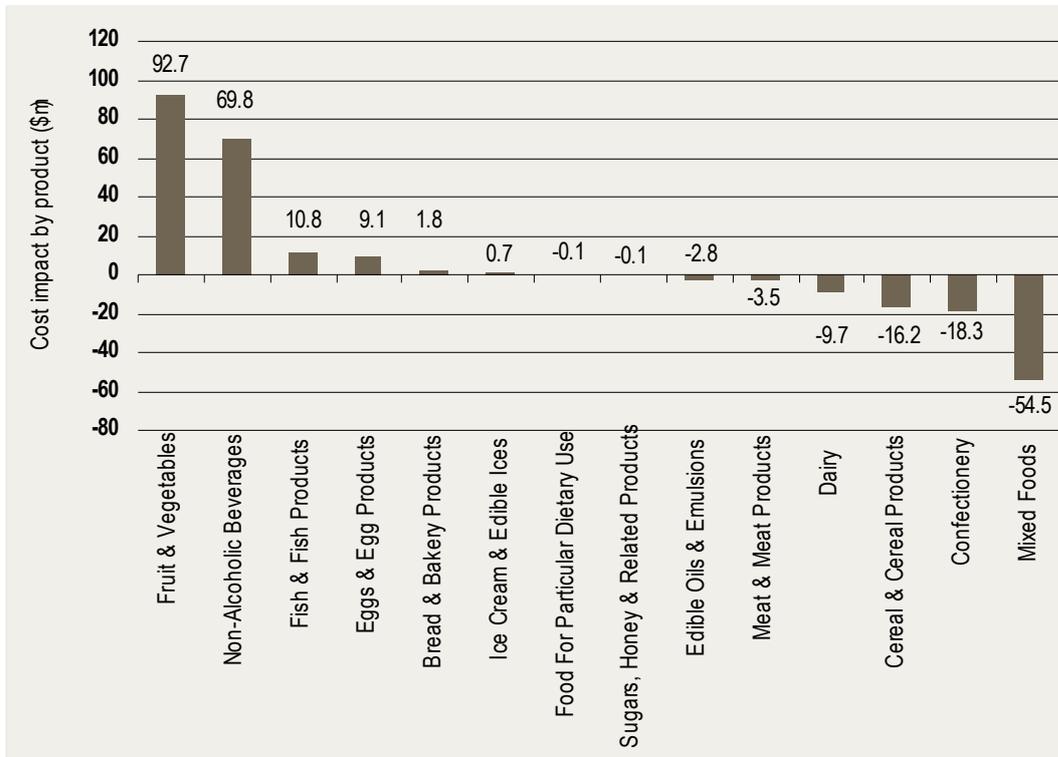
Data source: CIE calculations.

12 Total net present value benefits by market outcome (\$m)



Data source: CIE calculations.

13 Total net present value benefits by market outcome by product category (\$m)



Data source: CIE calculations.